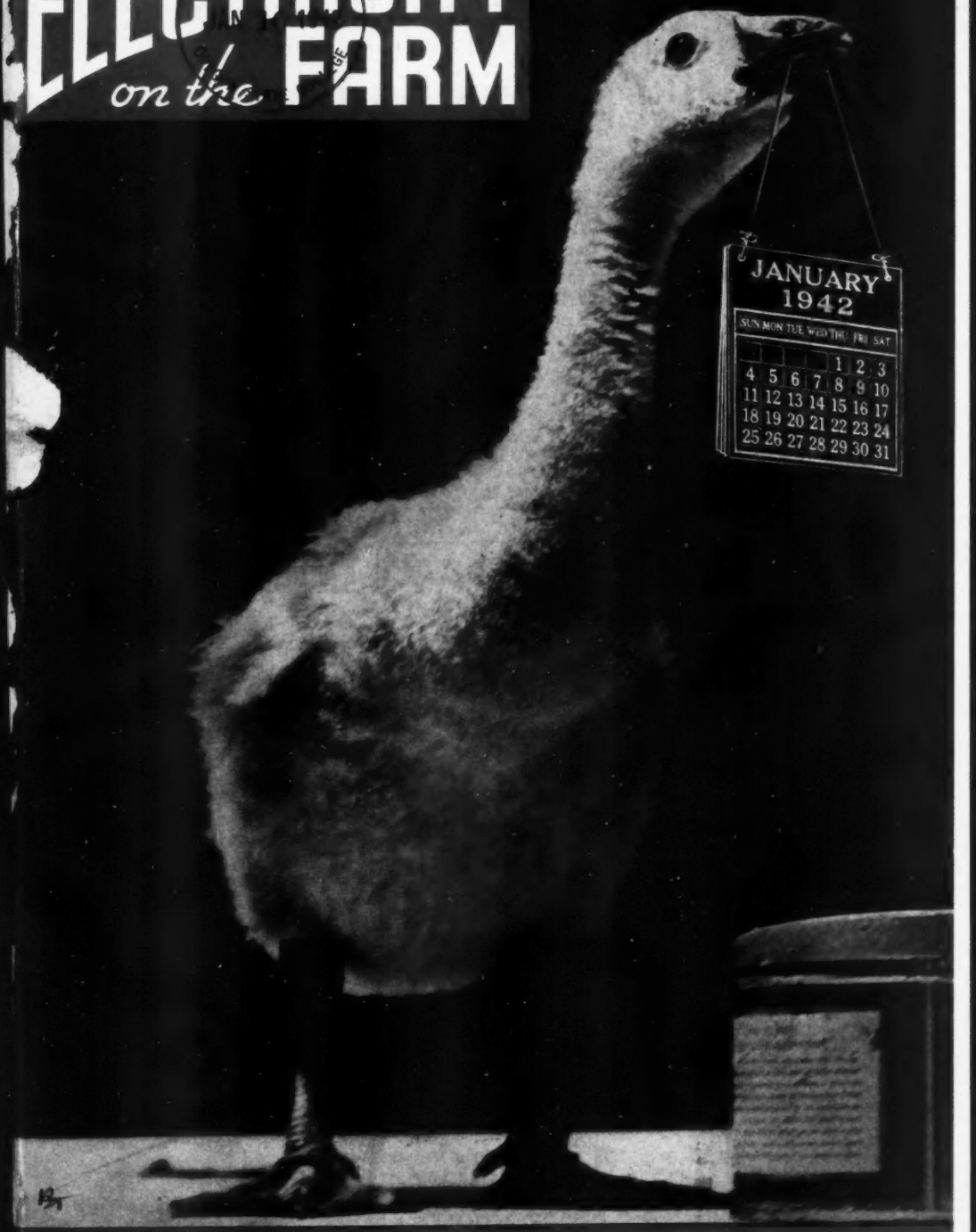
ELECTRICITY on the FARM



THE NATIONAL MAGAZINE OF RURAL ELECTRIFICATION

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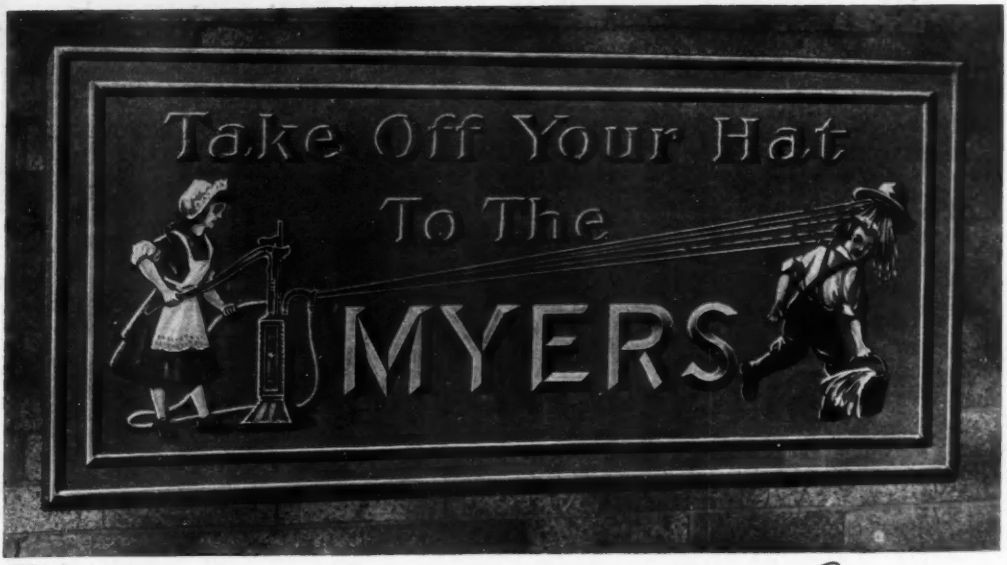

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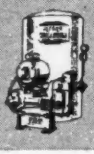

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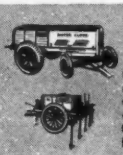

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Editor's Chat

Facing the Music

On numerous occasions ELECTRICITY ON THE FARM has urged its readers to prepare for labor shortages and increased production by obtaining labor-saving and productive equipment while it was still available. Many have done so and have arranged for needed repair parts. That will help others who will flock to the dealers when the pinch comes. Some equipment is no longer available.

Present facts are these: The Department of Agriculture asks for increased production of dairy and poultry products, hogs and vegetables. These are the products with which electricity can aid in increasing production and saving labor. Farm repairs and farm equipment have high priority ratings; but *priorities are not parts and not motors.* We may have to make the best of some tough situations.

So long as the emergency lasts, ELECTRICITY ON THE FARM will give its attention to defense needs. We will give you as many practical examples as possible of how electricity can help in increasing production of those foods needed in greater quantities, and how to make electricity take the place of the boys who have gone into the service or the men who have been attracted to higher monied jobs in defense industries. More attention will also be given to keeping needed present electric equipment in use and farm machinery in repair. In doing so we will try to "keep our shirts on" and our "feet on the ground".

Keep in touch with your local power situation. If a shortage of power exists, do your part by curtailing your unproductive and luxury uses of electricity. If no local shortage exists, there is no patriotic reason for curtailment. Electricity may enable you to definitely contribute toward defense by increasing production and releasing labor. Study the possibilities.

Materials for new farm lines are no longer available. The Office of Production Management states, however, that the effective use of electric facilities and electricity now available to farms for increasing production and replacing labor is entirely in accord with OPM policy.

"Guts"

When danger threatens, most humans are inclined to stand on the sidelines and watch, argue, and quibble. Should we run, fight or act innocent? We're scared of what might happen, whatever we do. We look for the easy, painless way out.

But when someone takes a real poke at us, fear flies! Procrastination and indecision are gone.

We are now fighting for freedom. A few men with warped notions, selfish arrogant souls, with nothing to lose, and possessed of unlimited ego, have been making this world an intolerable place for free men to live. They are typified by Hitler. But in addition to the Hitlers abroad, we have little Hitlers in our own country,—labor leaders whose motives are selfish, whose interest in men-who-labor is primarily in using them as dupes to pay tribute and destroy peace, whose records are often criminal, and whose stock-in-trade is mostly contemptible ego. They have nothing to lose. Honest, high principled, ordinary citizens—business men, farmers, industrial workers, tax-payers—have been standing by,—fearful—buffaloed, while the little Hitlers and some "gutless", log rolling politicians have absconded with some of the freedom which is America. The working man who must buy the privilege to work and limit his productiveness to the pattern of his dictator is not free. Business which must buy the privilege to exist is not free. Farmers who are having to buy permission to go to market are not free. Taxpayers have been duped into paying the bills.

Now that we are standing by the side of death,—with recaptured courage, and fighting foreign Hitlers, God grant us courage also to face our own at home. We need more unselfish, honest men of high principle—and with "guts".

Labor needs honest cooperation based on American ideals; but the fellow who is holding up defense production for time-and-a-half for overtime, or brow-beating labor into strikes for selfish power is no friend of freedom. Public sentiment can strike him down.

And while we are applying "horse sense" to our actions, let's examine our own harness and be sure we are as much interested in the strength of the tugs as we are in the size of the nosebag.

Geo. W. Kable

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Photo courtesy Illinois Agricultural Assn.

Running water and electrical equipment in the kitchen enable Mrs. Linn to care for a flock of 10,000 turkeys, including 1,000 breeders. The kitchen has an automatic electric range, dishwasher, refrigerator, water heater and a number of small appliances. Mrs. Linn chose the dishwasher in preference to a maid. All dishes for the day are washed after dinner in the evening.

Talk Turkey with Electricity

Electricity for Home and Flock Makes It Possible for Mrs. Linn, Illinois Farm Woman, to Care for Both While Mr. Linn Farms and Runs Gravel Pit. Tenants "Stick" to Modernized Homes

By HARRY L. SPOONER

THIS story is about Mr. and Mrs. Oscar Linn of Lewistown, Illinois and their success with the use of electricity on their farm. The farm has 840 tillable acres, plus 300 acres of Illinois River swamp, mainly used for duck hunting.

The Linn farm is called Duck Island Farm. The soil is sandy. Eighteen inches down, the farm is underlaid with gravel. It is not suited to corn culture as it gets too dry before the crop matures. The major crops grown are wheat, soy beans and alfalfa. From 400 to 450 cattle are fed each year as well as around 600 to 700 feeder hogs. For the last eight years turkeys have been an important product, starting with 600 the first year. These have been increased each year until this year about 10,000 are being raised. The cattle and hogs are bought and fed but the turkeys are raised on the farm, a breeding flock being kept for that purpose.

"Up to ten or twelve years ago, our lighting we had to depend upon kerosene", said Mr. Linn. "Then we put in a farm lighting plant. In addition to light two houses and a barn we had to run the plant most of the time and it was very expensive. We had a washing machine hooked up to the plant but every time we wanted to use it, we had to get a man on hand to start the engine. This was quite a nuisance. We also had a flat iron and a few other small appliances connected but it took too much, the plant being overloaded.

"Previous to four years ago we used coal and kerosene stoves for cooking. Then we installed a bottle gas stove. This was a big improvement but it was expensive, costing about $1 a week to operate not withstanding we bought one of the best ranges possible.

"For seven years we had used a kerosene refrigerator, a six-foot box. This was satisfactory as far as keeping food was concerned and the operating cost was not excessive but the first cost of $388 was a considerable investment. The chief disadvantage was that the bottle had to be filled every night, a great inconvenience.

"When we knew that the coming of the electric line was a certainty, we had our own home, the tenant houses, now increased from one to two, the barn and other outbuildings wired for lights. We also purchased an 8-foot electric refrigerator, a washing machine with spinner attachement, a radio, and a lot of small appliances, such as sandwich toaster, waffle iron, flat iron, shaver, Mixmaster, coffee maker, etc. We did not change the range until recently when we found that we were paying for an electric range and not having it. Mrs. Linn is very enthusiastic over the range. She likes it better than the old range because it is faster, cleaner and more economical to use.

Electricity Stepped-Up Gravel Pit Production

"Using the amount of current we do on a farm of this size, we secure the lowest rates available. But even were this not so, when we think of the things the electric appliances replace and the labor they save, it would still be economical.

"A short time before the electric line was built, we opened a gravel pit on the farm, using a farm tractor and a gas engine for power. After this was opened, I divided my time between the management of the farm and that of the pit. Mrs. Linn helped a great deal especially with the increasing turkey flock.

"When electricity became available, we electrified the gravel pit and at once production went way above anything we had anticipated, necessitating more of my time at the pit. The present year we are furn-

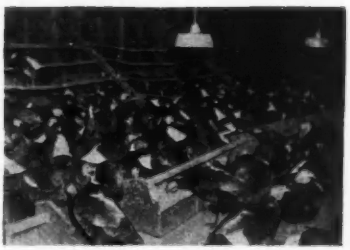


Photo courtesy Turkey World

Part of the breeding flock of 1,000 under lights at the Linn farm.

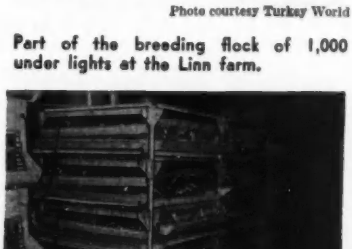


Photo courtesy Turkey World

Electric brooders have replaced oil brooders on the Linn farm. The saving in poultry mortality since making the change has been about 10 per cent. This saving alone pays for *all* the electricity used on the farm.

Eleven motors are used at the gravel pit. Production has been stepped up above all expectations. Gravel is being furnished for township road building, some being hauled as much as 60 miles.

ishing gravel for township road building over a large area, some being hauled 50 to 60 miles. So this year Mrs. Linn took over the entire management of the turkey flock. She was able to do this because of the labor saving use of electricity in the house and on the flock. We consider the aid electricity has given us in this regard to be the biggest item on the farm.

Ultraviolet Lamps Increase Fertility of Eggs

"We keep our own turkey breeding flock, from 800 to 1000 birds. By placing lights in the laying house we have increased our egg production materially. Then we installed an ultra-violet light over the feeders. This has increased the fertility of the eggs. We have always had a high record of hatchability but this has increased since putting in the light.

"It is in the operation of the brooder house that the saving of labor was most noticeable. We had been using oil burners for heating and brooding. With electric brooders this year and with about 11,400 turkeys, our entire cost was only about $50, or about one-half cent per bird. With oil burners, it had been from 1 to 1½ cents per bird, to say nothing of the labor of filling five brooder stoves with oil, the fire hazard involved, and the uneveness in heat, which we do not have with electric brooders. Our death loss during the brooding season has been reduced by about 10 per cent. This saving alone pays for all the electricity used on the farm.

"Since we have had electricity, we have been able to get more rapid growth of our turkeys as we can keep lights on until 10 o'clock at night, so they get more time to eat. We have achieved an increased growth of from ½ pound to 1 pound per bird during the first ten weeks.

"Had it not been for electricity, Mrs. Linn would not have been able to manage the flock this year. When the turkeys were moved to the range, much of which is a half mile or more from the house, practically all her time was required away from the house. In order to give all this time, we purchased an electric dish washing machine at $270 and a water heater. The dishes are washed but once a day. They are put in the washer after the morning and noon meals but are not washed until after the evening meal, all being washed at once. This takes a larger stock of dishes, but the time saved to spend on the turkeys makes up for this investment. She would rather have the dish washer than to have a maid, which would otherwise be necessary.

"With the electric range, she can prepare her meals, put them on to cook and set the range so it automatically cuts off when the food is cooked. We bought the best range possible, with the automatic features to save time and labor. No fear of fire is felt, so she can give her undivided attention to the turkeys.

"In connection with the turkey raising, another convenience consists of two small electric water systems installed in the brooder house. Our water all comes from one well. We have a 10 x 10 storage tank, from which the water flows by gravity to the different farm buildings. In order to get pressure to raise it to the upper floors, we use electric pumps.

"We have a windmill on our well, but when the wind is not blowing, we use an electric pump here, also.

Electrified Shop a Necessity

"For a farm our size, a farm shop is a necessity. We have electrified this shop and operate such tools as a sickle grinder, emery wheels, drills, etc. by electric current.

"We feed from 40,000 to 50,000 bushels of corn every year to cattle, hogs and turkeys. We do not raise our own corn but buy it and have it trucked in. We have an elevator where we store the corn and other grain feeds. We have replaced a 4-cylinder gas engine with a 5 h.p. motor to elevate the grain. This has been a great convenience and a time saver. It was not always possible to start the gas engine without a lot of trouble. Now we only have to push a button.

"We have even replaced the gas engine on our little concrete mixer with an electric motor.

"Eleven motors are hooked up for the various operations at our gravel pit, with a total capacity of 150 h.p.

"In addition to all the benefits we ourselves have received from electrification of our farm, our two tenant families have benefited also. They have electric lights, radio, washing machines, refrigerators and small appliances. These conveniences make life worth living on a farm and there is no turnover of farm help when these conveniences are available.

"With all the things mentioned for which we use electric current, our costs are only about $15 a month except for the three months brooding season of the turkeys, when it runs about $30 a month. We use from 800 to 1200 kilowatt hours per month of current.

"Both Mrs. Linn and myself are so sold on the benefits of electric service that nothing would induce us to dispense with it. It has been a time saver, a convenience and a decided money maker for us."

Egg Laying Contests for Roosters

New Jersey is considering an egg-laying contest for male birds. They do not expect the roosters to lay the eggs, but they do believe the male bird has much to do with the laying ability of his offspring, just as a bull influences the milk production of his daughters. The laying would be done by daughters of the male bird.

Electricity As Defense Aid

Have you used electricity in some manner to increase production, replace labor, or keep the farm plant running smoothly? If so, we invite you to write us about it. It may help some other farmer. Just tell us in your own words in a letter what you did. Be specific; give figures if you have them; describe the equipment if homemade; tell exactly HOW it increased production or replaced labor. No wild theories, please; no testimonials; just facts you as a farmer would like to have from other farmers who have found a better way. We will pay for all articles we use. Good pictures are very helpful in describing equipment or processes or telling one's story.

"Lights do more than just enable one to see on the farm. They extend the daylight hours for doing chores. They save labor by making it possible to do work more efficiently in dark places and permitting some jobs to be done after daylight hours." *S. P. Lyle, USDA.*

Mr. and Mrs. Fuchs.

Coal Stokers for Farm Homes

Mrs. Fuchs Says the Reduction in Colds Justifies the Stoker

By E. A. SHERMAN

THIS may not be the time to rush out and try to buy a coal stoker. In fact you may not be able to get one unless a dealer happens to have one on hand. It is the proper time to think about coal stokers, however. This is the cold weather period, and the time when many people are apt to have colds.

Perhaps the greatest benefit from coal stokers comes from having even, automatic heat. You remove the clinker, fill the hopper and adjust the thermostat. That's all for the day; the thermostat and small electric motor do the regulating and stoking. If your coal conveyor extends into the coal bin, you will not even need to fill the hopper. In either case you can go to church or out for the evening and be sure you can come home to a warm house.

Stokers are made for anthracite coal and for soft coal. They are somewhat different in construction because of the different methods in which the two coals burn and form ashes or clinkers. In operation, they are quite the same; just a motor to operate the coal screw and the fan for forced draft. They are designed to be installed in your own hot air furnace or hot water or steam boiler.

If you have a dairy equipped with a steam boiler for supplying large quantities of steam and hot water, and you are short of help to fire it, the stoker can come to your aid there, too, as an expert fireman.

One advantage of the coal stoker is the clean burning of the coal. Ample oxygen is supplied by forced draft to burn up all the coal. There is less dirt from the handling of coal and ashes, and less smoke and soot, due to complete combustion.

In large installations, the amount of coal saved through efficient combustion might be considerable. In a home it is probable there would be little saving of coal, but much better heating of the house. In some locations stoker coal may be purchased for a little less than other grades.

A typical farm stoker installation is located on the 104 acre farm of Mr. and Mrs. George Fuchs of RFD No. 6, near South Bend, Indiana. Mr. and Mrs. Fuchs have lived on this farm for 39 years. They installed their coal stoker in the Fall of 1938. It was installed because they wanted a more satisfactory, comfortable and healthful method of heating their house.

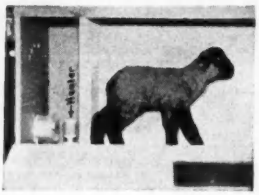
The large Fuchs' home is shown in the illustration. Only two people live in it, so only the first floor is heated. The temperature control thermostat is located on an inside wall of the living room. Clinkers are removed and the hopper filled twice a week. Before installing the stoker they used from five to six tons of mine-run Pocahontas coal per season at $8 per ton. During the three winters they have used the stoker they burned six tons per season at the same price. Perhaps the most important part of the story is told in Mrs. Fuchs' own words:

"After enjoying the conveniences provided us by our many electrical appliances, it is difficult to say which appliance we appreciate most." (They have electric range, refrigerator, water heater, stoker, pump, two radios, washer, iron, two sweepers, toaster, waffle iron, fan, clocks, heat pad, infra-red lamp, emery wheel, sausage grinder, drill, fanning mill, yard lighting, and fluorescent lighting in kitchen, dining room and living room.) "However, our stoker certainly ranks high in our estimation, not only from a convenience standpoint, but an economical and health standpoint as well.

"We find that the uniform temperatures provided by the stoker reduces the number of colds in our household, which in itself is enough to justify the purchase of the stoker."

If you have a coal stoker, be thankful, and keep it in good operating condition.

Left: This is the stoker. It is installed with coal screw and draft pipe through the ashpit door. Note the control wires coming down alongside the hopper. It's clean down there, too. **Right:** The large home on Inwood Farm. The coal stoker is installed in the cellar.



View showing fan and 300 watt, screw base heater in lower left compartment.

A Box Type Lamb Brooder

By R. L. SALING

Farm Service Supervisor, Eastern Oregon Light & Power Co., Baker, Oregon

Newly born lamb, chilled on a cold night in the open.

SHEEP raising is one of the larger industries in Eastern Oregon because this part of the State is ideal grazing land. The lambing season usually extends from the latter part of January to the first of April, during which time there is often extremely cold weather accompanied by high winds and snow. Ewes are not confined to barns but are left out in the open during the lambing season and thus there is great chance for loss of lambs by exposure. Through the able help and advice of Mr. D. E. Richards, Superintendent of the Eastern Oregon Experiment Station at Union, Oregon, the rural department of the Eastern Oregon Light and Power Company undertook to develop a lamb brooder.

New-Born Lambs Helpless

A newly born lamb, particularly when chilled, is one of the most helpless of domestic animals. We were reasonably sure that we would need a brooder of the type which would confine the lamb. In the construction of this brooder we were able to profit by the results of older inefficient methods of reviving chilled lambs. Heretofore the lamb was placed in an apple box in which gunny sacks had ben placed and left close to a wood stove. It is unsatisfactory because the heat is not applied evenly. The method also requires a great deal of attention from the attendant in handling the lamb and also in watching the fire.

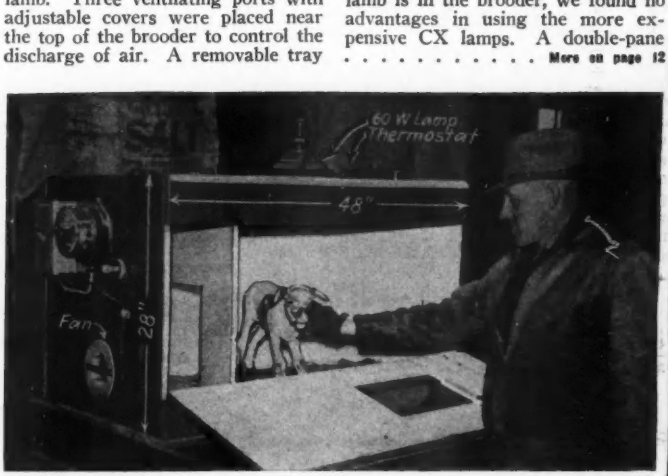
Another inefficient method which has been in use for many years is submerging the animal in heated water. There is then the problem of drying the lamb and keeping it from becoming chilled when exposed to cold winds after it has been returned to the ewe. This also requires much time and attention from the attendant and is uncertain in its results.

The brooder we built is 48" in length, 28½" in height, and 28" in depth—all outside measurements. It is made of three-quarter inch Insulite which is water-proofed, is an excellent insulator and is very strong. In putting the brooder together, we used cement-coated nails without any interior framing. An SW3 Lyon circuit breaker and a No. 2 Wafer for thermostatic control was used to regulate a Type C screw-base heating element of 300 watts. This element has capacity enough so that an inside temperature of 120 degrees can be maintained with a variation of only one degree from the off and on position of the circuit breaker. A type R1 chick brooder ventilating fan was built into one end of the brooder to insure a constant supply of fresh air. The fan draws in a constant supply of fresh air and forces it around the heating element where it is warmed before reaching the lamb. Three ventilating ports with adjustable covers were placed near the top of the brooder to control the discharge of air. A removable tray covers the entire bottom for convenience in cleaning and for sanitary reasons.

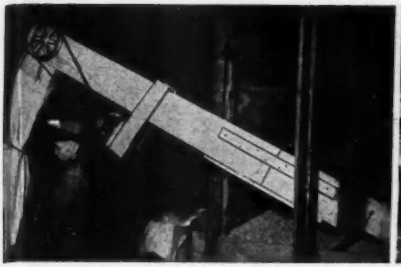
A partition is placed the full width and depth of the brooder 10½" from the fan end to keep the revived lambs away from the heater and fan. A hole 10" by 12" was cut in the partition and screened. Several additional ventilating holes 1½" in diameter were made near the top of the partition to allow maximum circulation of air.

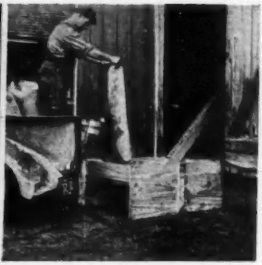
Mazda Lamps Best Heaters

We have experimented with both 60 watt Mazda CX lamps which produce some ultra-violet and 60 watt inside frosted Mazda lamps for light and heat from above. Because of the short length of time that a lamb is in the brooder, we found no advantages in using the more expensive CX lamps. A double-pane . . . . . More on page 12



The box type brooder with the same lamb shown above, after being in the brooder 45 minutes. "Dick" Richards, Superintendent of the Eastern Oregon Experiment Station at Union, is listening to the "B-a-a". View shows construction of the brooder. Fan is in near end of box close to bottom. Note partition of insulating board with screened opening, and double glazed window in door. On top is the thermostat control and the 60 watt heating and lighting unit.





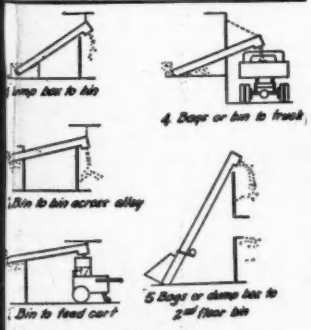
Left: The upper or power end of the elevator showing how the motor is attached. With an eight inch pulley on the elevator, a two inch motor pulley will give 230 ft. per min. belt travel, three inch 340 ft. and four inch 450 ft. Should the canvas webbing belt become loose, it may be tightened by sliding the upper pulley in its slotted bearings. If the motor support arm is pivoted, the weight of the motor will keep its belt tight. **Right:** "Boot" end of the elevator in an unloading hopper. The top of the elevator is open except for a wood or sheet-iron slide which regulates the rate of flow of grain onto the belt.

Quarter Horsepower Grain Elevator

By **PROF. H. H. MUSSELMAN**

Prof. Musselman is Head of the Department of Agricultural Engineering, Michigan State College, East Lansing, Michigan.

GRAIN is often handled many times from field to final disposal on the farm. Each handling requires energy. Electrical energy might do much of the work if properly harnessed. As an illustration of the inefficiency of man power for this kind of work, figures show that 1/10 of a horsepower is required to lift 5 bushels of wheat per minute to a height of 10 feet, and that a man carrying this amount of grain up a star, if such were possible, would have to use about three times as much power to lift himself as to carry the grain. The total power required would be about 4/10 horsepower, which is greater than a man's capacity; yet a ¼ horsepower motor driving an elevator would have power to spare.

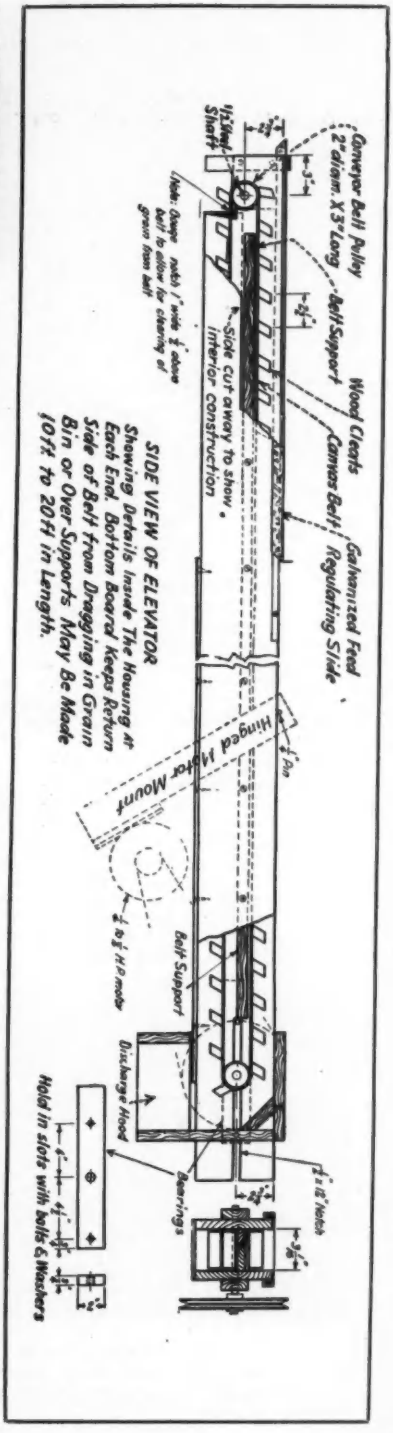


Use Diagrams

The light weight inclined elevator may be used to transfer grain on the level or at almost any angle. It is essentially a webbing belt having wooden or metal cleats attached to it and running in a trough. The cleats clear the sides of the trough sufficiently to prevent wedging of the grain. The belt may be run at speeds of from 200 to 500 feet per minute. A hood is used at the upper end to direct the grain, and a slide is used at the lower end to control the feed. The motor is hung on the elevator with a belt tightening hanger. The motor may be set close with a "V" belt or installed at some distance from the drive using a ¼" rope as a belt running over V pulleys. A rope belt must be spliced smoothly.

The capacity of an elevator of this type set at a 45° angle will be approximately one bushel per minute for each inch of width at a reasonable belt speed.

In using it, the foot of the elevator is set in the grain and the feed controlled by the slide. Grain may be taken from a dump box, or from the bottom of one bin to the top of another, or from the bottom of a single bin to the top of the same, thereby circulating the grain—a pro-


Conveyor Belt Pulley
2" diam. X 3" Long
Belt Support
Wood Cleats
Canvas Belt
Galvanized Feed Regulating Slide
1½" Shaft
Side cut away to show interior construction
SIDE VIEW OF ELEVATOR
Showing Details Inside The Housing at Each End. Bottom Board Keeps Return Side of Belt from Dragging in Grain Bin or Over Supports. May Be Made 10 ft. to 20 ft. in Length.
Hinged Motor Mount
Belt Support
Discharge Hood
Bearings
Hold in slots with bolts & Washers

Loading grain with portable elevator on the farm of Herbert Gettel.

cess of great value in case of damp or heating grain. Grain may also be taken from the bin and delivered to the fanning mill, grinder, or into bags or trucks. The elevator may also be made long enough to elevate to the second floor. Installations up to 35 feet high have proved satisfactory.

Since portability is important, the device should be made as light as possible. With 3" belt a 12 foot long outfit should not weigh more than 35 to 50 pounds, exclusive of motor, which is made quickly detachable for moving. For above size unit, a ¼ horsepower electric motor is sufficient power. For larger or longer units, more power may be required.

The trough and frame is made of 6" boards. The belt may be elevator webbing, binder canvas webbing, or canvas folded to 3 ply. The cleats may be of metal or wood, and the conveyor pulleys of the die cast type or turned from wood with ½" shafting. The bill of material should not exceed $10 in cash.

EDITOR'S NOTE: Following are some experiences of farmers with these small elevators. The information was supplied by the Detroit Edison Co.

• *From H. J. Gettel, RFD, Pigeon, Mich.*

"A large part of my grain handling is now being done by my fourteen year old son. With the small, portable grain elevator and a quarter horsepower electric motor, 'Lorny' has placed more than 6000 bushels of grain in our bins. *In former years at least two men were required to do the job.* The elevator cost only $28 and we use the motor from the tool grinder for elevating. Considering the small investment, no other device on my farm is more important to me than this portable grain elevator."

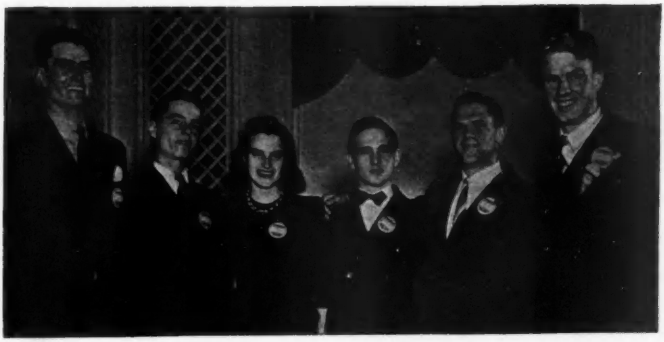
• *From Edward McCrea, RFD, Bad Axe, Mich.*

"A quarter horsepower motor elevated all my grain directly from thresher to bins this fall. Ordinarily two wagons, one team and four men would be needed to do the work this small motor did.

"Compare the investment costs and you will understand why we farmers must use electrically driven equipment such as this elevator. This inexpensive machine is a money maker for me. 1200 bushels of oats and barley were elevated 16 vertical feet for less than a dime with my 20 foot elevator."

4-H Club Congress

The 4-H Club Congress in Chicago last month at the time of the Livestock Show was again a grand affair. Groups of outstanding farm boys and girls from all over the country celebrated a year of achievement in better farming and living accomplishments. It was one of the finest groups to meet any place in the country. From the standpoint of those attending, it was also very much worth while. Attendance at the Stock Show, specially arranged trips and inspections, the living at a big hotel, the banquets, and, most of all, the meeting of farm young people from all over the country,—young people whose selection means that they have ambition and a willingness to work—are experiences of immense educational value. They are worth working for.



4-H Club Rural Electrification Winners—Left to right: Carl E. Huish, Arizona; Keith E. Mullenger, Iowa; Gladys McClung, West Virginia; Camillo Alfred Gardner, Maine; Richard Dobbs, Mississippi, and Charles E. Severance, South Carolina.

The group of 4-H'ers of perhaps the most interest to our readers were the winners in the Westinghouse National Rural Electrification Contest. Thirty-five states sent winners. Of these the six shown in the accompanying photograph were each awarded scholarships of $200 in addition to their trip to the International. They are young people to be proud of.

Competition for the Westinghouse awards is supervised and judged by local, state and national Club leaders. General 4-H activities and reports as well as membership in the 4-H Electric Project counts in the scoring. It is not necessary that the Club member have electricity in his home in order to compete. The project is educational like all other 4-H projects and is directed toward better farming and better living on the farm.

There are about 31 million motor vehicles in the United States, all shod with rubber, so the number of tires and tubes runs into many more millions. We use more rubber than any other country in the world, and about three-fourths of all the rubber we use goes into tires and tubes.—Dr. E. W. Brandes, Bureau of Plant Industry, U. S. Department of Agriculture.

Repair Machinery NOW!

FOLLOWING the Livestock Show in Chicago last month, Agricultural Engineers from Colleges and Extension Services in all sections of the United States met with representatives of farm machinery manufacturers and dealers at the call of the U. S. Department of Agriculture to discuss what should be done to insure sufficient equipment and machines to produce the crops being asked for by the Government. High priorities have been granted manufacturers for materials for making repair parts and some new machines. Priorities, however, mean nothing so long as some other manufacturer has a higher priority for the same materials for guns, tanks or ships. There will not be enough new tractors, machines and motors to supply the normal demand. Repair parts for most machines are still in stock and available, but there may be a shortage next summer.

Since the Chicago meeting, war has been declared. That makes the materials situation much more serious. Machinery manufacturers have been further restricted in production.

In a Memo requesting each State and County USDA Defense Board to organize and carry out before March 15 a complete machinery repair and reconditioning program, Secretary Wickard said: "Machines that would be discarded in normal times must be used in 1942 and must be maintained at maximum operating efficiency if we are to reach our production goal. In the spring of next year defense production will probably overload the railroads, truck lines, express companies and the parcel post system. Farmers must expect serious delays, disappointments and losses if they delay repair and reconditioning of their machinery and take chances on having machines break down during the busy seasons."

DO THIS!

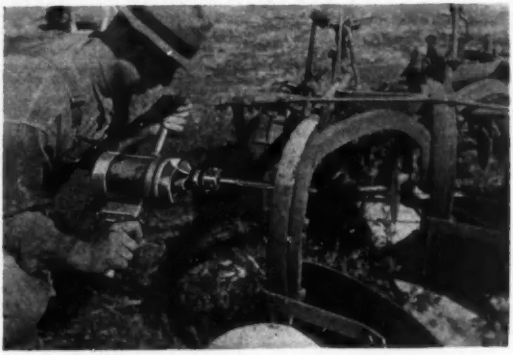
Check all your farm machines this winter—NOW—for broken and worn parts needing replacement or repair.

Order needed parts at once from the man you bought the machine from or your local machinery dealer. Most local dealers have directories of *all* farm machines manufactured with notations of whether repair parts are available and from whom.

If you have an orphan machine (one for which no repairs are available) you will probably have to have repairs made locally by a welder or machine shop or sell the machine for junk.

Collect and sell all junk metals around the place not in use. The country needs them.

Get in touch with your local county agent or vocational agriculture teacher if you are interested in attending



a farm machinery repair school.

If you are a good mechanic, get your shop in order. You may be called upon to help in the repair program.

Patronize your local machinery dealer. He will have few machines to sell this year and may need the repair and parts business to keep going.

DO IT NOW!

BUY DEFENSE BONDS

No—It's Not a Strike

Approved Electrical Fence Economical

No, it's not a strike; and it is not a line dispute. It's just the Porker for Britain families visiting, *but not eating* over part of the 1,120 rods of electrified fence which has been doing duty on the farm of August Weisensel, Sun Prairie, Wisconsin, since 1935. It is an Underwriter's approved fence and cost 14¢ per rod to install. That was a saving of 86¢ per rod over customary fence costs. Saves steel for defense too.

Our Best

"God Bless America" we sing—
But do we do our best
To help her in her time of need
When we're put to the test?

American FREEDOM & LIBERTY
These words are often stressed,
No nation in this whole wide world
Has been so *truly* blest!

Let's cease to grumble and complain
United we must stand
We ALL must work — and watch and pray—
KEEP FREE OUR OWN FAIR LAND!

Mrs. W. W. Wagoner
Ishpeming, Mich.

Modern Dairy at Sir Francis Drake's Landing

By EARL BURKE

The illustration shows Henry Mendoza standing between the electric steam accumulator and the compressor units which cool the milk storage room and meat storage box at the Drake's Bay Dairy Ranch near Point Reyes, Calif., owned by the Mendoza's. Here in 1579 Sir Francis Drake and his crew beached their ship the Golden Hind loaded with gold bars and rich treasure looted from Spanish galleons and ports along the Spanish Main while they made repairs for their return voyage to England. A brass plate recorded as having been nailed to a great post when Sir Francis claimed these lands for Queen Elizabeth has been found and its old English inscription authenticated by the California Historical Society. Now the Drake's Bay Dairy Ranch, has been reached by electric service and the dairy has been completely electrified. Cream which used to be made into butter and shipped by wagon and slow sailing vessel to San Francisco has been superseded by market milk produced under modern sanitary conditions and placed quickly on the San Francisco market. Milking machines, electric water pumps, electric sterilizers and electric refrigeration have helped make the change to the more profitable system of dairying. The electric steam accumulator furnishes steam for sterilization of equipment and for heating water for washing utensils. The compressors operate the refrigeration equipment which help in placing the milk on the market in excellent condition.

Food Grown at Home Frees Spendable Cash

Home production of dairy and poultry products, fruits, vegetables, and meat from animals fed and butchered on the farm offers a two-way advantage to families with low cash incomes, the Department of Agriculture Yearbook points out. Home-grown foods usually improve the diet—both in quality and quantity—and they release for other purposes money that would otherwise be paid out for food.

Infra-Red and Fan Type Brooders

Mr. H. O. Roberts of the Central Power and Light Company, Corpus Christi, Texas, reports that Joe Payne, a large scale broiler producer of Arkansas Pass, has tried 23 infra-red brooders alongside an equal number of fan type brooders of the same make, and one radiant heat brooder of a different make. The power cost was a little lower with the fan type over infra-red and the chick quality was about the same. Mr. Payne changed to electric brooding because of the excellent results of a large turkey ranch nearby.

Buy Defense Bonds

Lamb Brooder

. . . . . (Here from page 8)

glass window with panes set one-half inch apart was placed in the door of the brooder so that the interior could be inspected at any time without opening the door.

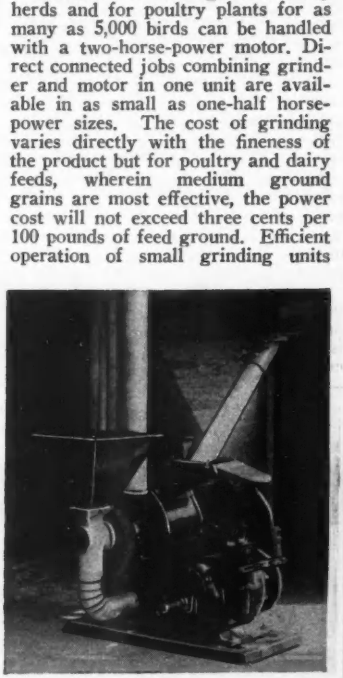
In operation, this box-type brooder is quite successful, especially on prematurely born lambs. The length of time required to revive a chilled lamb is between thirty and forty-five minutes, depending upon the condition of the animal when placed in the brooder. An inside temperature of 90 degrees was maintained at all times. The brooder will use approximately 50 kilowatt hours of electricity per week when in continuous operation and has a capacity of from six to eight lambs at one time.

This is the third year the experiment has been conducted with this type of brooder. The Eastern Oregon Experiment Station has a band of 1,100 ewes, approximately 90 per cent of which are yearlings and the brooder is in constant use each brooding season. Mr. Richards is very enthusiastic because of the increased number of chilled lambs which have been saved since the brooder was placed in use. During the 1941 lambing season, no lambs were lost at the Eastern Oregon Experiment Station due to chilling.

Grind Your Own

Increased feed prices suggest the possibiilty that home grinding and mixing of locally produced feeds can result in a saving of money. Remarkable progress has been made the past few years in the development of highly efficient, small-power feed grinders designed for electric power.

Grinders for average size dairy herds and for poultry plants for as many as 5,000 birds can be handled with a two-horse-power motor. Direct connected jobs combining grinder and motor in one unit are available in as small as one-half horsepower sizes. The cost of grinding varies directly with the fineness of the product but for poultry and dairy feeds, wherein medium ground grains are most effective, the power cost will not exceed three cents per 100 pounds of feed ground. Efficient operation of small grinding units



necessitates automatic delivery of feed to and from the grinder. This is readily accomplished by an arrangement of gravity bins.

W. C. Krueger, Agricultural Engineer, New Jersey Ext. Service.

George Watkins Gets a Letter in Camp

PRIVATE GEORGE WATKINS
Company B
Headquarters Batallion
324 Infantry

Dear Son George:

At last your Mother and I are about to write to you. We have wanted to do this for a long time. Your mother is sitting by me in the living room and I am doing the writing. It is a lot easier to write and read by these electric lights than by the old coal oil lamp. We are right proud that our family is helping with national defense. We hope you feel that way about your camp life. We hope you are keeping well. We are both right well.

Milker Aids Production Increase

We have missed you a lot. The labor shortage on the farms around here is pretty bad. The defense factories pay such high wages that everybody wants to work in them. It is a good thing we put in the milking machine before you left. I know it was your idea to do that. Your mother helped to decide that matter, and, Son, I want you to know she is right most of the time. The Government is asking us to produce more milk. We have more yearling heifers than we ever had before, so I guess, with the milking machine we can milk more cows this winter.

Prices of milk are up. This section of the state has been asked to produce more milk to feed the British. The condenseries, the creameries, and the cheese factories want our milk and the price is the highest it has been since the World War. I heard a report on the radio that a bunch of the milk from our section is going across the water in one form or another.

The milk cooler is working good. I thought when you left that I would not be able to keep the motor going, but it has given us no trouble and has helped us to get the highest price this fall. I guess we won't sell as many cows to the butcher. The price of butterfat is enough higher for us to keep Old Bess even though she doesn't give as much as the others. She had a heifer calf and I know you will like that. The calf has a spot on its forehead and one white foot and its tail is white.

Your mother wants me to be sure and tell you the good news here at home. You know, we used to send the washing over to Mrs. Briggs. Well, she is failing and can't take in washing, but the good news at home is that your mother has a new washing machine and an electric iron. She says to tell you she is glad to "just put the clothes in the washer and go off and do other things and have everything at home." You know, she was never satisfied with the ironing of other people and with the new iron she can make things like she wants them.

I have seen some of the boys from camp around here. They all look good in their uniforms and they walk straight. It looks like the training will do some of them a lot of good. We listen at night to some of the radio programs which come from the army camps. They sound like the boys are having a good time. I guess they give you some big dinners for holidays. We want you home sometime soon. I guess you have to get a permit from your Captain to make trips. If you will talk to him, maybe he will let you come. Your mother and I will be so glad to see you.

Mary Jane tells us about you every time I see her. She seems to get more letters from you than we do. Her school is going good and the children all like her.

Your mother is sending you a chocolate layer cake. The picture on the Saturday Evening Post shows all the other fellows gathering around the fellow who gets a package in camp from home. You better get this from the post office when you are alone.

With love,
MOTHER AND DAD.

Written by C. E. Wylie, Head of the Dairy Department, University of Tennessee, Knoxville, Tenn.

Equipment Rental Idea Being Used by Many

By RAYMOND DONOVAN, Lincoln Park, N. J.

MANY housewives were quick to take advantage of the plan outlined in the September issue of *Electricity On The Farm* describing how Mrs. A. N. Dodd made her washing machine pay for itself. Some of them did not limit themselves to buying just washing machines but have applied the plan to other electric household equipment.

Mrs. Arthur Hanson, of Grome Street Pequannock, N. J., is buying a Mixmaster and making it pay for itself by renting it to neighbors at twenty-five cents per rent. Thus far the machine is more than paying for itself and she says she could rent half a dozen of them if she had them. Her fourteen year old son Tommy Junior delivers the machine to the home of the person renting it when a call comes in for the use of the machine.

Mrs. Earl T. Buelinger, sixty-five

Bill Gray, ~~farmer~~ *fighter*

UNTIL DECEMBER 8, 1941, Bill Gray was a farmer.

His farm was a business enterprise. He worked hard, and the land gave back to him . . . good things to eat, clothes, a car, a decent education for the kids. Some years, there was even a little left over.

Today, with the nation at war, Bill Gray has stopped being just a farmer. He's a *fighter* . . . and his peaceful, rolling acres have turned into a victory weapon just as powerful as planes and tanks and guns.

While the war goes on, Bill Gray is in the front line of a tremendous battle—the battle of *food*. His farm will provide nourishment and strength for America's fighting forces—*human fuel* as vital as any stores of gasoline or oil or ammunition.

When the war is over, *food will win the peace*. America's food—abundantly, inexhaustibly produced by countless American farmers like Bill Gray—is America's greatest weapon for Peace.

Bill Gray may never get a hero's medal. But he's mighty apt to be the *real* hero of the victory ahead.

Today, more than ever, electricity helps you. In every branch and type of farming, electricity means better, easier, more efficient operation.

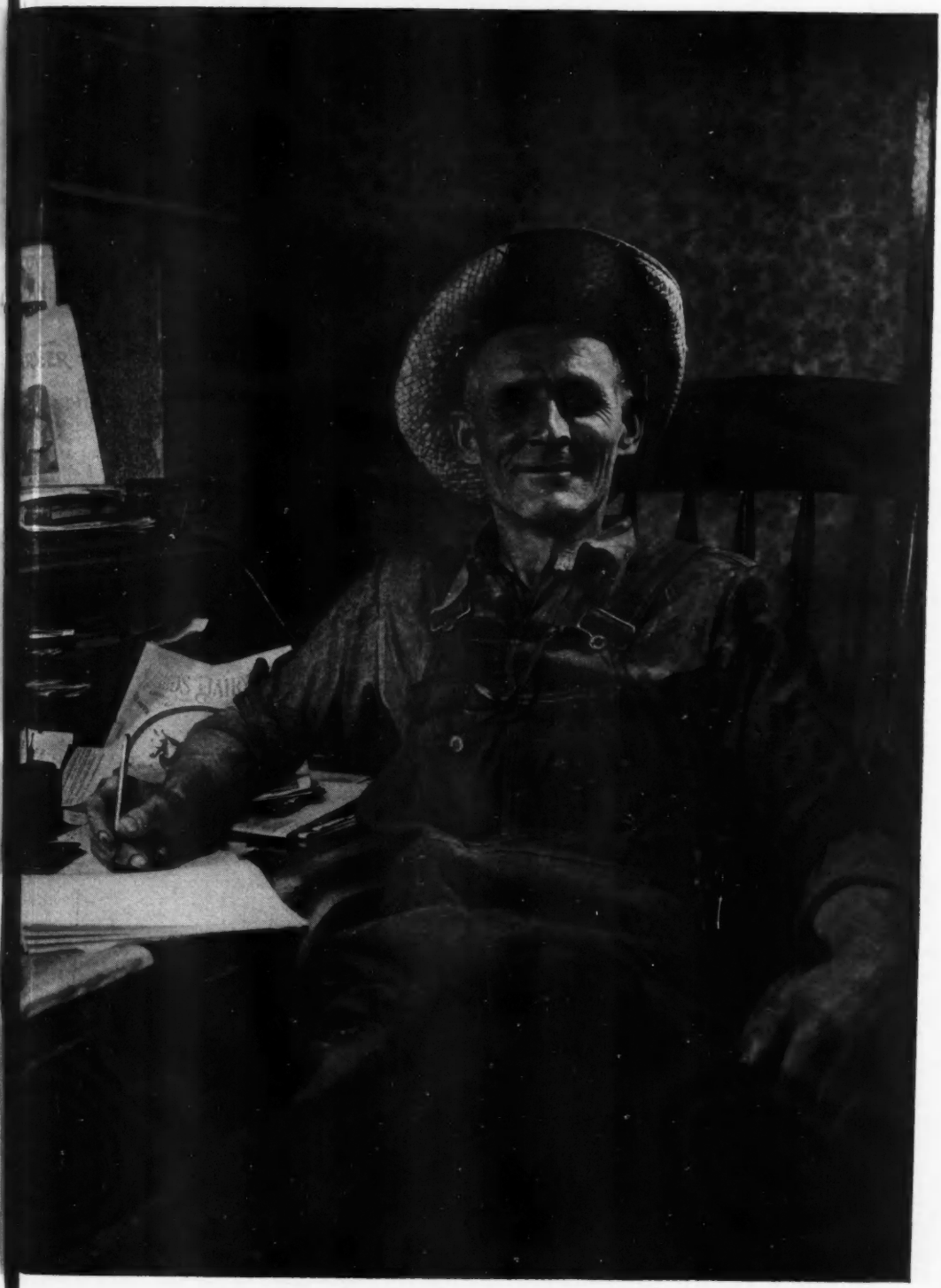
When more food is needed, electricity helps increase farm production. When labor is scarce, electricity does much of the work. When working hours are long and hard, electricity brings comfort and relaxation and pleasure at the end of the day.

Westinghouse again repeats its pledge to the American farmer: The name Westinghouse will continue to stand for the highest development of all the good things that electricity makes possible. Look for that name when you buy.

Westinghouse

WESTINGHOUSE ELECTRIC & MANUFACTURING CO., Pittsburgh, Pa.

ELECTRICAL PARTNER OF AGRICULTURE



year old widow of McIntoke Road in Denville, N. J., has longed for a vacuum cleaner for fifteen years. Her eyesight began failing some years ago and she could never be sure that her home was clean after sweeping with a broom. What's more it was hard work for her to sweep but she couldn't afford to hire anyone to do the work so had to do it herself. A friend saw the washing machine article and suggested to Mrs. Buelinger, that perhaps she could work the plan with a vacuum cleaner. Mrs. Buelinger agreed to try it. The friend got several neighbors to sign up for rental of the machine at twenty cents an hour. Mrs. Buelinger averages about six dollars a week from rental of the machine to her ten customers who call for and return the vacuum when they are through with it.

Mrs. John R. Ward, Totowa Borough, New Jersey, and Mrs. Frank Maher, of Parsippany, N. J., have both purchased electric irons, which they have wanted for a long time but were unable to buy. Mrs. Ward bought a five dollar iron which has more than paid for itself. Mrs. Maher was going to buy a five dollar iron up until the day she heard of the "make it pay for itself" plan. She changed her mind immediately and bought a fifteen dollar iron on time. She figured she may as well have the best as long as it's paying for itself. Both these women have children who call for and deliver the irons to customers. They charge ten cents per hour for rental.

George Meyers, a farmer of Mountain View, N. J., purchased two cow clippers and a milking machine paying cash for them but he is making them pay for themselves by renting them to nearby farmers who don't have this necessary equipment on their farms. He rents the clippers for a quarter a day and the electric milking machine for twenty cents per cow.

Warren Lee, at Suntan Lake, N. J., is buying two incubators and two brooders. He plans to rent one of each for enough to pay for the whole four machines. He hasn't as yet decided what he will charge for rental of the machines although he has decided what machines he will buy.

* * *

EDITOR'S NOTE. This rental system might be one way of extending the use of productive and labor-saving equipment during the period when equipment is hard to get be cause of defense requirements.

Meet the Champs

These are winner's smiles. At the left is Henry Albright, veteran sheep shearer of the western states who won the Senior shearing contest at the International Livestock Show in Chicago last month. He lives on a farm near Aurora, Illinois. At the right is 18-year-old Junior Champion Lelon Lange of Columbus, Wis. Both used Stewart electric clippers. Champion Albright chose the standard professional hand-piece on the three-section jointed shaft, V-belt driven from above, but Champion Lange brought his own electric Shearmaster with motor in the handle. It was the clipper he learned with under the instruction of his "Vo Ag" teacher, Willis Fritag at Columbus High School. Lelon's comment to the reporters and congratulators after the contest was, "Gee, I'll bet Mr. Fritag will be tickled."

The chief object of the International Shearing Contest is to improve the national wool crop through better technique in shearing and handling the sheep and fleece. The boy's contest was started this year because boys are the "comers." Lelon Lange sheared his dad's sheep, then sheared for the neighbors at 20 cents a head until he developed championship skill. Speed in the contest counted only 20 per cent, condition of fleece and sheep getting the other 80 points.

Other winners were—Senior Division: George Olien, Illinois; Peter Edwards, Oklahoma; and William Whistler, Illinois. Junior Division: Ken Knox, Illinois; Wilbert Heggemeier, Tennessee; Leon Cummings, Indiana; Wayne Basting, Illinois; and Hal Clark, Indiana.

Water Warming Pays Dividends

There is a direct relationship between the amount of water consumed by poultry and the amount of mash feed intake. Birds need all the water that they can consume in order to maintain high production. Consumption is reduced when water is ice cold, and the freezing over of fountains and water pans prevents early morning drinking. There is, however, no advantage to heating the water above 45 to 50 degrees.

Electric fountain heaters and pan warmers offer the most practical and safe means for poultry water warming. Immersion heaters are available with and without thermostatic heat control. A saving in installation cost is possible by separate thermostatic control of the entire water fountain heating circuit rather than individually controlled heaters. The possibility of electric water warming should be considered when wiring poultry houses for lights since a saving in wiring costs is then possible. One three-wire system will give light and water heating service, whereas separate installation calls for two 2-wire circuits.

W. C. Krueger, N. J. Extension Service.

Quick Freezing Of Eggs In Home

Locker-plant patrons may store eggs in their lockers during the heavy laying season, experiments at the Oregon School of Home Economics indicate. A successful procedure for small-scale freezing of eggs, as well as experiments with the use of frozen eggs in cooking, has been carried out at Oregon State College. Experiments show that the addition of a small amount of honey to the eggs before freezing is the most effective treatment, though salt, sugar, or corn syrup may be used. Little work has been done on quick freezing of eggs in the home.

Electrical Housekeeping

Edited by
GAIL MEREDITH

Not wood, nor coal, nor gas, nor oil but Electricity Runs the Range

"NOW we come to the *electric* range."

The Consumers Study Group of Wales Corners had their October meeting at the Tibbets farm. They had been talking about stoves, kitchen stoves, all afternoon. Nell Tibbets was chairman and she had found it hard to conceal her impatience while different women reported on fine white enamel ranges that burn wood or coal, on the slick lines and excellent performance of modern oil stoves, and the new convenience of gas, for Nell herself cooked with electricity.

"What made you decide to buy an electric range, Nell?" asked Ann Shorder.

"The way they cook food,—and the convenience. When I was first married, I cooked on a little old square wood burning stove that had lost one hind leg and had to be propped up on four bricks. The oven door never did shut quite tight, and when I poked the fire too hard, ashes sifted down into the oven on my baking.

"I had to carry in the wood when Ted was busy, and going out in the rain, or the sleet, or the snow for chips and wood is a nasty job."

"How is it more convenient than —?" began Kay Ronald.

"It's more convenient than any other fuel in the world," Nell interrupted. "We do not have to carry it in to the wood box, nor keep filling a can or a tank. It doesn't leave any ashes for Ted to scrape out of the stove and scatter along the floor on the way to the door. I do not have to run out doors to turn a valve when the supply gets low, nor remember to order ahead. I do not have to depend on having a truck get here just when a tank is empty or on the driver's being able to fit me into his schedule, or fighting his way through drifted roads so I can get dinner."

Ann sniffed,—audibly.

"A body'd think you were lazier'n time, Nell, to hear you tell it."

"I'm not,—but I am glad that I do not have to keep on doing things the hard way. I like this fuel that is right there ready for me to use all the time."

"Electricity's off now and then," said Ann.

"I know it is. We gave quite a little thought to the fact that our fuel supply depends on a line of copper wire that may be pulled down by a falling tree, or weighed down with sleet. In time of violent storm it would wait on the speed with which those linemen could get the wires back in place. But our utility service is backed up by an organization of trained men whose entire business is keeping that current flowing. They seem to me dependable. They are going to be there year after year. They couldn't pick up and leave town when business is bad, or when they saw a better opening somewhere else,—not even if they wanted to."

"Jed did," said Kay.

"Oh, I don't mean individuals," Nell spoke half impatiently. "They change of course, but the organization stays. Besides, I know several women who have cooked with electricity for a long time. My sister has used it for sixteen years, in three different communities, and she told me that in all that time there was just one day when she couldn't use her range to get a meal. I'm willing to take that chance."

"I haven't seen your stove, Nell." Kay put down her knitting and got up from the low rocker near the window. "Could we go out in the kitchen and look at it while we talk?"

"I'd be glad to have you."

Nell rose and led the way through the dining room into the bright, pleasant kitchen. The women broke into a chorus of admiration as they crowded into the room.

"It is certainly lovely to look at," said Ann, running her fingers along the smooth white top of the range.

"It seems to me that the thing I'd like best about having an electric range in my kitchen is that there isn't any real fire in it," Ruth Strand turned a switch back and forth as she spoke. "I'd be glad not to have any matches around for the children to get hold of; not to have any flame that could catch at a

Step Savers in the Kitchen

Winning Letter, October Contest

"Architecturally, I suppose, our log cabin is all wrong, but we think it is livable, cozy, and friendly. We designed it, cut the logs, and built it ourselves.

"My kitchen is about 13x13 inside the natural log walls. It is wired visibly, for that's the only way we could have it. We have good light in our kitchen and we use it for study, library, office, gathering place, parties. There are double windows, filled with flowers, and the cupboards hold many things: Magazines, so we won't have to go upstairs when we have a moment to read; towels and dish cloths handy; my little girl's "things" in one drawer, so she can play on the floor while I work.

"The bath room is right at the door of the kitchen, and it is small and can be warmed from the kitchen range. The bedroom is just on the other side of the bathroom, so we won't have to go all over the house for our 'necessaries.' We already have the kitchen wired for the electric range I hope to have. The top of the cupboard is a grand place for our little kitchen radio, and I don't have to go to the living room to hear every program. I can work no end better as I listen to music.

"I keep all my electric fixtures in a cabinet near the double convenience outlets, so I can just use them at a moment's notice. On Sunday nights I plug the electric percolator in one socket, and my sandwich grill in the other. I can get supper in 10 minutes. I keep my electric iron in the same cabinet too, for I often have to iron out something at a moment's notice. We keep our washer near the plug too, and near the sink, so we won't have to carry water. It works like a top.

"My husband has a plug under the light over the mirror for that new electric shaver which I plan to give him for his birthday. That will save a million steps hunting his razor. I am buying a tiny electric heater with my birthday money. Then we will be all set, and the winds can blow.

"I have four narrow shelves over my double windows in my kitchen. They are wonders. If I were able, I'd have glass shelves, but as it is I have six-inch redwood shelves. We keep all our collections on them, and they look bright and pretty. I wash them all once in a while, as I wash dishes, and wipe off the shelves, and the world looks bright again.

"I never dry my dishes. Spent half my life drying dishes. Not going to do it again. I wash them, after grabbing my rubber gloves from my general 'utility' drawer, in rich suds, rinse them in hot water, and drain them. I do dry my silverware.

"I iron in my kitchen in winter. I have had another grand step saver installed. It is an ordinary smooth board about a foot wide, pointed at one end. It is fastened by hinges attached to the wide end and to my wall. There's a leg hinged on to the board, and it folds up. This will be my ironing board, fixed just exactly the right height for me. When I am not using it, it is hooked up to the wall, out of the way. Then when ironing presents itself, I unhook the little end, bring it down, unfold the leg, let it stand on the floor, and I am ready to spend an hour happily, for I love to iron. Another ironing stepsaver, as well as a time and work saver: When I bring in my wash, I fold all sheets, towels, and flat work. I place this bunch of cloths on my regular ironing board, and IRON ON THEM AND THEY ARE ALSO IRONED.

"You can see that I don't have a modern city kitchen, and yet I do save steps, hundreds of them every day. I have to, so that I can play ball with my small daughter, or help my husband re-pot his many flowers for the winter. When we designed our home, we knew that we would never be rich, but that doesn't keep me from having a cozy place in which to work."

MRS. THOS. W. FINCH
R. 2, Rustburg, Va.

sleeve or a skirt, and no coals to come tumbling out on the floor. I can't imagine a nicer fire than one that doesn't burn at all, no sparks flying out of the chimney, no over heated walls. You'll think me an awful coward about fire, but I have Bobby and Sue on my mind every minute when they're in the kitchen."

The other women nodded.

"We know how you feel," said Kay. "And you could be sure that if one of them turned a switch like those on the front of this stove, nothing could leak out into the room nor drip down on the stove. There'd be a little heat going to waste, that's all. It is a safe fuel."

"It looks so clean," said Agnes.

"It is," answered Nell. "A fire without a flame can't blacken up the pans, nor smudge up my walls and curtains. Turn on that switch again, Agnes, will you please? You can see for yourself that it doesn't make any smoke or soot to run electricity through a wire for heat. It is the cleanest fuel in the world."

"Does it bake as well as your old stove?" Ann asked doubtfully.

"Better than any other stove I've ever used. And I can rely upon it to bake just the same next week as this. There is a dependability about this heat —"

Heat's Heat. Or Is It?

Heat's heat, however you get it," growled Aunt Hetty Parsons, peering at the range over the steel rimmed spectacles balanced half way down her long nose.

"Not when it comes to cooking," Nell shook her head. "Not any more."

And she was right. While we have been learning to measure ingredients accurately for uniform results, we have discovered that we have to measure the heat and the time too. You know yourself that a big part of success depends upon what goes on after the mixing is done. An electric range lets us measure the heat, measure it exactly, without any guess work. The flow of the current through a burner does not change with a change in the weather outside; there is nothing that could get stopped up to vary the amount of current that gets through; there is nothing for the user to adjust.

"Are those regular convenience outlets there on your range?" asked Ruth pointing to the back panel.

"Yes."

"It must be handy to have them there."

"I use them right along for my percolator, for the electric tea kettle, and for the roaster."

"Do other ranges have them?" asked Ruth.

"Sure" put in Kay. "I've seen them on ranges that use other fuels, but they are always on the most expensive models. Like the lights in the oven."

"How about this dohickey that controls the oven temperature?" asked Ann, spinning the knob from 300 to 500 and back again.

"You can get a thermostat for ranges that use other fuels," said Nell, "but I've yet to see a control that turns the fuel on and off for

you on any but an electric range. I can set this switch to keep the current on high for five minutes in this front burner here, just long enough to have my potatoes start to cook, and then on low for the rest of the cooking time.

"If I am going to be gone all afternoon, I can get my supper ready and put it in the oven. This clock on the back of my range has a mechanism that will turn the current on at four and off at six,—or any other times I set it for, as far as that goes. Some ranges have this timer connected with the deep well cooker, and some, I believe, with one of these burners on the top of the range, too."

"What they won't think of next," grunted Aunt Hetty, cautiously reaching out to turn one of the switches back and forth.

The women laughed and turned back again to the living room.

"Well," said Ann, lingering to speak to Nell who was turning out the lights, "I don't know how the others feel about it, but I can't say I'm looking forward to going home and building a fire for supper. Not tonight, I'm not. I just wonder how long it would take my hens to earn one of those stoves, Nell?"

Blue Ribbon Pies

Last fall the Ohio State Grange had a state wide pie baking contest. It was won by Mrs. Turney Pontius of Thatcher, near Circleville. Mrs. Pontius decided to enter the contest because she had such uniformly good results baking pies in her electric roaster.

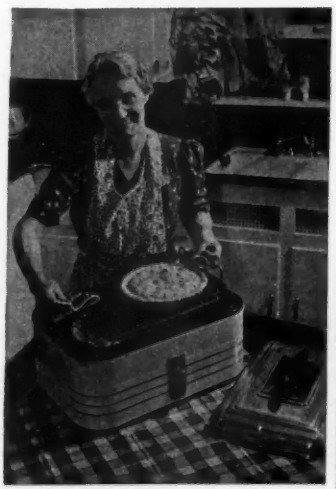


Photo courtesy Westinghouse Elec. & Mfg. Co.

The first competition was in the local grange chapters throughout Ohio. Mrs. Pontius promptly walked off with first honors in the Logan Elm Grange of which she was a charter member. Next was the county competition, and Mrs. Pontius won again.

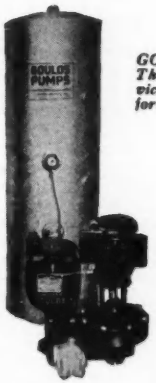
Takes Oven to Contest

The final round of the competition between the 88 county winners in the state was to be held in Cleveland during the Grange annual meeting. This presented a problem to Mrs. Pontius, because she was determined to enter a freshly baked pie in the big contest. She did not like the idea of baking the pie at home and carrying it 175 miles in a car.

She and Mr. Pontius hit on the idea of baking the pie at the home of friends in Brunswick, a town near Cleveland. So the day before the contest, the two loaded the roaster and all the ingredients for the pie into the car and set out for Brunswick. They visited that evening with their friends and next morning they rose early, for the pies had to be entered in the contest before ten.

"My friends just couldn't believe I was going to bake the pie in the roaster," Mrs. Pontius said. "But it was just like baking pies at home. We had the pie entered in the contest half an hour before the dead line."

Mr. and Mrs. Pontius attended various meetings during the day and were in a conference of Grange lec-



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Goulds JET-O-MATIC Water Systems are not subject to this danger because of their exclusive Dual Service feature. A JET-O-MATIC can quickly and economically be converted from shallow to deep well operation (or vice versa) without replacement of pump or tank. In addition, JET-O-MATIC may be installed in any desirable location, regardless of the location of your water supply source.

Investment in a Goulds JET-O-MATIC is further protected by reason of its simplicity of operation—only one moving part, no close "fits"—a guarantee of long life without costly maintenance or repairs.

Before you put your money in any water system, get full information (see coupon below) about Goulds JET-O-MATIC.

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340 Fall Street, Seneca Falls, N. Y.
Please send me the name of the nearest Goulds Distributor. And full information about the new Goulds JET-O-MATIC Water System.

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turers when an official entered the room and asked for Mrs. Turney Pontius.

"I was so surprised that I didn't even rise until he had called my name the third time," she said. "Then he told me my pie had been awarded first prize. I was awfully surprised and awfully pleased, of course."

More than 8,000 pies were entered in the various rounds of the contest. Entries were judged on the basis of appearance, crust, filling and taste.

When Mrs. Pontius was asked if she had any tips for good pie baking, she said:

"Well, I believe in dicing the apples and in using a bit of quick cooking tapioca for thickening. I use plenty of butter and fill my pies very full. I always glaze a pie with milk before baking. I follow the instructions in my roaster recipe book, baking the pie at 450 degrees for 20 minutes and then at 400 degrees for thirty minutes."

It has nothing to do with the story, but it is interesting that the day of that contest the Pontiuses were celebrating their 37th wedding anniversary.

If It Stays in Service It Aids Defense

The third section of the Consumers' Pledge for Total Defense, drawn up by the office of Price Administration, reads: "I will take good care of the things I have."

A lot of us who make that promise are going to find that the first thing we have to do is learn how to care for a good many of the things we are using day after day. We know that metals of all kinds are desperately needed for defense work. Limited amounts are allowed manufacturers to make their products. So everything we are using made of metal needs double safeguards to make it last as long as possible; to make it outlast this emergency if we can.

Use What You Have

That is true with even so simple a household device as the electric toaster. If we can keep on using the ones we have, somebody who has none will be able to buy the new ones being made.

It doesn't look as though there were much to learn about using an electric toaster, does it? You just get it out and plug it into a handy wall outlet. Simple, very simple, just plugging it in.

But don't go away yet. Your toaster and its cord will be apt to last longer if you will push the plug in steady and straight. No jiggling it back and forth, part in and part out so a spit of blue flashes from one of the terminals to the other.

That is arcing. And an arc pits those terminal plugs. And too many pits prevent a good contact. Besides pitting the plugs, an arc may possibly burn out the element in your toaster, or the cord, or even, way back along the line, the fuse of that circuit in the switch box.

Caring for a Toaster

About the only upkeep to a toaster is its cleaning. Toast leaves crumbs which should be brushed or shaken out every time the toaster is used. Left in they will char and stick. A crumb tray in the bottom of the toaster takes care of that matter very neatly. But if your toaster has no tray, you can get them out with a soft brush. Butter or jelly on the outside has to be washed off with a damp cloth, but that is as near as the toaster should get to water. The electrical parts, the wiring and the switch should never be wet. After the washing, polish the metal with a dry cloth. Any discoloration may be rubbed with a little metal polish.

When you are through making toast, pull out the plug. Leaving the toaster turned on is a double carelessness. It wastes current to run it through the toaster after the last slice is toasted and it cuts down the useful life of the toaster. Its wires, the wires in any electrical heating element are built to last a certain number of hours. You fritter away a part of that time carelessly if you leave the toaster turned on after you are through using it.

Last year, or the year before, you might have said, if you think attention to such saving borders on the penurious, "What does it matter? A few minutes, here and there. We'll never be able to tell the difference." But this year with our faces set toward such saving as this nation has not known in many careless years, nobody says that.

Besides it is a good idea to turn off any heating device when you are not using it. If you will, it can never turn into a fire hazard in your home.

January Contest

Right here at the turn of the year is a fine time to whet your wits on a good hard contest. I've thought and thought how I could choose a subject that would invite scores of you from Maine to Texas and from Florida to Washington to send in interesting and helpful letters.

I have decided on this simple subject: *Why an Electric Range is Different.*

But do not be misled into thinking it is too simple. It will need a little study, a little comparing of different stoves and a little thought to write the winning letter. If you cannot see the actual stoves, you can read about them in magazines and advertising folders, and discover the outstanding differences.

The letter that seems to us the most complete and most interesting will win its writer five dollars. For any others we may publish, we will pay one dollar each.

Send your letters to Gail Meredith, 700 S. Mills, Madison, Wisconsin, by January 31, 1942.

Speed of Baking Varies with Pan

As defense needs cut off the supply of aluminum, tin and steel from cooking utensils, housewives will turn more and more to enamelware, glass and pottery for cooking, says the U. S. Department of Agriculture. Recent tests at the Bureau of Home Economics throw new light on how to use these materials to best advantage in baking. The tests showed that for short baking jobs, such as baking pie crust, enamelware is speedier than aluminum, glass or pottery. A pie shell which bakes to perfection in an enamelware pan in 7 or 8 minutes will need 10 or 11 minutes of baking in aluminum, glass or pottery. For a longer job such as baking a loaf cake or bread mixture, the difference in baking time may be even greater.

By **JEROME J. HENRY**

Record Performance

"Pepper Young's Family" claims a good many records among radio shows.

First it passed its 1,500th performance recently. Since the show's start on January 13, 1936, only one change has taken place in the cast. It has had the same sponsor, and it has had the same director throughout its six year history.

From the first, one of radio's best-loved actresses, Marion Barney, has been heard as the mother of this typical American family; Curtis Arnall, well-known young radio player, has played Pepper; and Betty Wragge has been heard as Pepper's sister, Peggy. Until his sudden and untimely death about a year ago, Jack Roseliegh was heard as the father, Mr. Young. The part was taken up by Thomas Chalmers.

Interoffice Correspondence

Here's a letter that turned up at NBC the other day, as Fibber McGee and Molly returned from a three months' vacation.

Dear Folks:

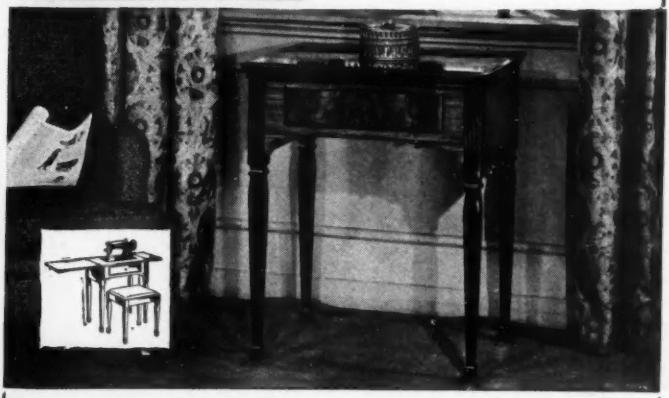
Well, we're back. It was a wonderful vacation. The word vacation, as you know, comes from the word vacate, or "get out." So we got out. We got out the hip boots, the fishing tackle, the shotguns, the camera and our old clothes. We can tell our old clothes from our new clothes because the new clothes usually have wire hangers in them and scratch our necks when we put them on, so we rarely wear them. Okay, so we got out. We drove up to Seattle, Washington, and took a boat up to Alaska, the Land of the Sourdough. It isn't necessary to go all that way to see a sourdough, however. You find them in Hollywood, too. They're known as sourdoughs because they look sour when they have to part with some.

Alaska is a wonderful country. I (Fibber) shot one of the biggest black bears ever taken in that country, and it *would* have to be me that did it because I know darn well nobody is going to believe it. It measured 7 feet 3 inches from schnozzle to stern in its bear feet, and they are sending the pelt to us as soon as it's tanned and cured. We're

Mrs. Franklin D. Roosevelt currently qualified as a radio veteran by launching her fifth series of regular weekly broadcasts over NBC networks. Choosing her topics at will, Mrs. Roosevelt's candid commentaries, entitled "Over Our Coffee Cups", are heard each Sunday over the NBC-Blue web.

"MADE TO LAST!"

"I've used the same Singer for fifty years . . . so when my daughter asked me what kind of electric sewing machine she should buy, I said, of course, a Singer! She won't need to get another the rest of her life . . . or worry over repair bills, either!"



Beautifully made. Everything about a Singer is selected for long enjoyment and service—from the lovely woods used in the cabinets to each mechanical part. See the new models at your nearest Singer Shop, and ask about trade-in allowances. Or, drop us a card for a home demonstration. There's no obligation.

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SINGER

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tanned, too. But we're not cured, because we think we'll go back to Alaska again next year.

It was a grand summer but we're glad to be getting back to work. We can mention the word "work" to you without wincing, because you're not one of those people who say, "WHADDYA MEAN, WORK? Stand in front of that microphone for 20 minutes a week. Call that work?" You know enough radio slaves to know that about the end of the season most radio "artists" would trade the works for a good solid job in a hamburger stand. But the show must go on. We can hear the proverbial guy in the back row saying, "Why?"

Well, so we can go back to Alaska next year, for one thing.

Until then, or until you come out to Hollywood, so long, with best regards from

FIBBER MCGEE AND MOLLY

"Dem Bums"

Graham McNamee, whose forte is sports broadcasting, was the last to know that the Brooklyn Dodgers dropped the fourth game in the late World Series. Graham was in Chicago on Sunday listening to the game while waiting for a train on which he had to return to New York, Intent on the play, the radio

"Service with a Smile", a new program inaugurated by Ben Grauer and Garry Moore (left to right, above), uses soldiers, sailors, and marines as guest performers. The show is touring the training camps of the nation.

veteran asked the hotel bellhop to warn him when it was time to leave.

At the beginning of the ninth inning with the Yankees at bat and the Dodgers in sight of victory, the bellhop warned Graham to be off. Graham waited until that third strike on Henrich, then dashed madly for the station assured that "Dem Bums" had won.

In New York next morning he found that sad end of the story. . . Mickey dropped the ball.

At Last They Learned How

Lum and Abner, the Pine Ridge philosophers from Arkansas, turn out four scripts each week, but they can remember when they worked 14 hours on one show, and never completed it.

When they started their first sponsored show more than 10 years ago, Lum and Abner (Chet Lauck and Norris Goff) were told to appear at the studio with the scripts, ready to go on the air. They had never seen a script. The night before the show, they started to work, but at program time they were stumped. Only three pages were finished.

Lum and Abner went on all right but they ad libbed—holding merely empty sheets of paper in their hands.

—I'm proud I am a farmer—

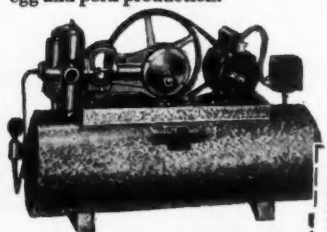
Why Pump for Stock?

...when DELCO WATER SYSTEMS
Product of General Motors
Will Water 33 Cows for 5¢ A DAY

It takes 3 hours to pump by hand the 1000 gallons of water which a Delco Water System will deliver to your faucets for 5c. 1000 gallons is the amount 33 cows should drink every day—or the amount 5 cows, 2 horses, 100 chickens and 8 hogs should drink every 5 days—or the amount carried into the house every month. Take your pencil—put your own value on your time, then see if you can afford to pump, when for 5c a Delco Water System will save you 3 hours' pumping time for every 1000 gallons used, and at the same time increase your milk, egg and pork production.

There's a Delco Deep or Shallow Well pump to meet your needs whether you require 180 or 1600 gallons per hour capacity. All are practical, economical, trouble free. Delco is a proven General Motors Value.

Get the facts. Don't go through the winter without the comfort, safety, and profit a Delco Water System will bring. Ask your Delco dealer or send the coupon. Buy on F.H.A. terms if you wish.



SHALLOW WELL SYSTEM Either horizontal or vertical tank

DELCO JET SYSTEM

DEEP WELL SYSTEM →

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376 Lyell Avenue, Rochester, N. Y.
Please furnish, without obligation, complete information on Delco Water Systems.

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Town_____

State_____ R.F.D._____

DELCO WATER SYSTEMS
PRODUCT OF GENERAL MOTORS

No Aluminum for Leg Bands

Because of defense priorities there will be no aluminum for poultry leg bands. Other materials must be used, and old leg bands are to be returned for reprocessing by the poultry industry. Chick wing bands, because of the necessity of piercing the wing, will continue to be made of aluminum. It is expected that this change will reduce this year's demand for aluminum to 11,000 pounds. It was 150,000 pounds last year.

Fatal Home Accidents Double Industry's

During 1940 twice as many fatal injuries occurred in homes as in industry, according to the National Safety Council. Home accidents cost 33,000 lives. Stairs and steps are the most dangerous, accounting for 16,600 of the total, with burns adding another 5,700 deaths. To reduce: Light the stairs, get rid of oily rags, waste, papers, and check furnaces, clean flues, and BE CAREFUL.

Step-Up Tractor Efficiency

With the average New Jersey tractor between six and seven years old, it is obvious that considerable improvement in fuel economy and power output is possible by reconditioning the tractor engine. The principal change suggested in reconditioning older tractors is the installation of so-called high altitude or high compression pistons. These increase the compression ratio, adapt the tractor to more efficient use of gasoline fuels and raise the horsepower output as much as 25 per cent.

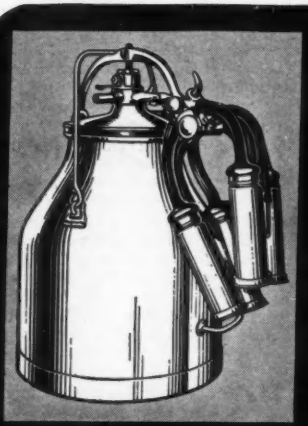
When replacing spark plugs, remember that high compression engines operating on gasoline require a plug of a different heat range than for low compression and high heat fuels such as distillate. The right plug for a particular job has a considerable bearing on plug life and on effective engine operation.

Since highest efficiency in tractor operation can only be attained when engine temperatures are held at approximately 170 to 180 degrees, a thermostat or an adjustable curtain is an essential accessory. With farm operating costs increasing and with the national emphasis on economy, it is especially desirable now to see that the farm tractor is kept at its highest point of efficiency.

W. C. Krueger, Agricultural Engineer, New Jersey Extension Service.

The output of petroleum products —gasoline, kerosene, and oils—from American refineries in a year would equal in qnantity a week's flow of the Potomac River past the City of Washington, according to the Census.

"While you were buying that, Mom, the boys elected me Host for our First Annual Waffle Eating Contest."



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NATIONAL DAIRY SHOW
MILKED WITH MILKERS AT HOME ARE MILKED WITH
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THE better the cow, the more she needs De Laval Better Milking. It has frequently been shown that De Laval milks the best cows of all breeds . . . and for good reasons.

The owners of these valuable herds do not entrust the milking of their cows to a milking machine until they have made the most complete and thorough investigation . . . until they have studied the principles and milking action carefully . . . until they have checked the results obtained by other users . . . in short, until they have all the facts, expert advice, and are completely convinced.

See your De Laval Dealer today or write us direct.

TWO GREAT DE LAVAL MILKERS

THE DE LAVAL MAGNETIC SPEEDWAY MILKER

World's best milker—and only milker with pulsations created and controlled by magnetic force, providing absolutely uniform, regular milking at all times and without adjustment.

THE DE LAVAL Sterling MILKER

Wonderful running mate to the De Laval Magnetic Speedway and ideal for small herds. Sterling Pulsator has only two moving parts and provides positive milking speed and action.

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NEW YORK 165 Broadway
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Questions and Answers

Small Electric Dehydrator

▶**Question:** *Where can I get a small fruit and vegetable dehydrator for farm use?* W. F. B., Mo.

▶**Answer:** So far as I know, there are no small commercial dehydrators on the market.

The U. S. Department of Agriculture has some plans for small dehydrators to be used over a cook stove. While I was connected with the National Rural Electric project in Maryland we also designed and built some small electrically heated dehydrators. You probably can still obtain a set of plans for these dehydrators by writing to Mr. A. V. Krewatch, Extension Service, Univ. of Maryland, College Park, Md.

Power for Deep Well Pump

▶**Question:** *My neighbor has a well about* 180 *ft. deep with about* 160 *ft. of* 1½ *in. pump pipe. How far down the cylinder is he does not know. The jack on the pump has about a* 12 *in. stroke. The drive pulley is* 42 *in. in diameter and the jack gears have a ratio of* 4 11/13 *to* 1. *Could this pump be operated with a* ½ *hp. motor if the pump isn't run under pressure?* W. G. H., Ohio

▶**Answer:** Assuming the pump and motor to be in good condition, a ½ hp. motor should be ample to operate your pump with either a single or double acting cylinder at the full depth of 160 ft. If the pump jack is an efficient one you can use a 3 in. pulley on the motor which should give you about 130 gallons of water per minute from your pump with a single acting cylinder.

S-4 Lamp Operation

▶**Question:** ELECTRICITY ON THE FARM *for September had an article on the use of S-4 sun lamps as a source of the Vitamin D factor for poultry. Will you please let me know the answers to the following questions:* 1. *What is the maximum number of birds that one lamp will effectively irradiate in one position?* 2. *Can one transformer take care of more than one bulb and if so how many?* 3. *What voltage does the transformer furnish the bulb?* I. O. D., Mass.

▶**Answer:** I cannot tell you the maximum number of birds that one S-4 lamp will irradiate effectively. Generally, it is recommended that one lamp be used over the feed hopper for each one hundred birds. If you have more than one feed hopper at some distance from each other, you probably would get better results with a lamp over each. If the birds were confined in a relatively small space under the lamp, you could undoubtedly irradiate many more than one hundred with one unit. I do not think any one has the final answer to this question as yet. The transformers made for use with these lamps are designed to operate only one lamp. The voltage supplied to the S-4 lamp in starting is about 245 volts. After the arc strikes the voltage goes down to 130.

Large 115 Volt Gong

▶**Question:** *I received a catalog from Lyon Rural Electric Company showing an eight-inch electric alarm bell, but this requires a transformer to reduce voltage to eight or ten volts. I am trying to get an alarm bell of eight or ten-inch diameter to operate on* 110*-volt,* 60*-cycle A.C., but have not located a source of supply as yet.* J. H. W., Pa.

▶**Answer:** Many manufacturers of electric bells make gongs in sizes from four-inch up which operate on 110 to 130-volt 60-cycle alternating current. They are made in weatherproof or inside designs. An eight-inch bell sells for about $14.00 and a ten-inch bell for approximately $21. If you cannot purchase bells locally, the Auth Electric Specialties Company, 422 East 53rd St., New York City, can supply you. It is my belief that the Lyon Electric Company can also supply these bells if you tell them what you require.

Sprinkler Irrigation

▶**Question:** *Looking over some old copies of your magazine, I find in the March* 1940 *issue an article on a new irrigation sprinkler. I would like the name of the manufacturer. Also what companies make irrigation pipe with the little nozzles about every two feet. I have heard of pipes that could be put together and taken apart without wrenches. Who makes them? I would like information on pump sizes as related to irrigation capacity. Any information you can give will be greatly appreciated.* H. S., Iowa

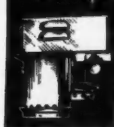
▶**Answer:** We have asked the Farm Line Company of Wilsonville, Oregon, to send you information about their Sprinkler illustrated in our March 1940 issue.

Pipe line spray systems commonly known as the "Skinner System" are made by the Skinner Irrigation Company, Troy, Ohio, and the Whiteshowers, Inc., Detroit, Michigan.

I enclose a list of manufacturers of Rotary Sprinkler Systems which includes the manufacturers of slip-joint pipe.

In figuring pump capacities for

Save up to $18.00 ON A FULL-SIZE ELECTRIC BROODER



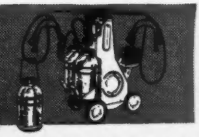
The TRUMBULL Brooderator Unit for Home-made Brooder . . . Capacity: 300 to 400 Chicks

MAKE YOUR OWN HOVER

You can make an insulated Hover for the Trumbull Brooderator in an hour, and the cost of your Brooder complete will be less than $20.00 We Guarantee the Brooderator, in your home-made Hover, to brood from 300 to 400 chicks efficiently and at very low cost. Brooderator, only $17.50, with full directions for making the Hover. Write for new folder.

The TRUMBULL ELECTRIC MFG. CO. 1012 Woodford Avenue Plainville, Conn.

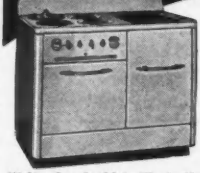
Get this HIRED HAND!



CLEAN-EASY MILKER WITH NEW GLASS MILK PAILS

Clean-Easy revolutionizes machine milking! New, sanitary glass milk containers give you "sight" milking—you know at a glance what your cows are doing! You get fast, clean, easy milking with less work! Gas or electric power, transparent or rubber teat cups, portable or track models. Write Ben H. Anderson Mfg. Co., Madison, Wis., Dept.

Monarch ELECTRIC and COAL-WOOD COMBINATION RANGES



Today's most popular "high line" range. Built to provide year 'round convenience and comfort in the farm kitchen. See your "Monarch" retail outlet or—

Write for booklet illustrating complete line.
MALLEABLE IRON RANGE CO.
1241 Lake Street Beaver Dam, Wis.

FAST MILKING *DOES* GET MORE MILK!

and **-Surge**

Write for Easy Monthly Terms

IS THE *FASTEST* MILKER EVER BUILT!

● Only 4 inches instead of 4 feet to keep clean—easiest to keep clean—cleaner milk. ● It milks faster. ● It gets more milk (less stripping). ● It milks all cows better—a light pull for an easy milker—a heavy pull for a hard milker and a progressively increasing pull on all cows as they are milked out. ● Stimulates each cow to top production throughout her entire lactation. ● Write for the Free, fascinating Surge Catalog. Proof of Superiority. Easy Monthly Terms Offer. HURRY!

BABSON BROS., 2843 W. 19th St., Dept. 5512, Chicago, Ill.

irrigation, these figures may help you. A cubic foot of water per second (equivalent to about 450 gallons per minute) will cover an acre about one inch deep with water in one hour's time. The amount of water applied in one irrigation usually varies from about one inch depth to six inches, depending upon the crop and the method of applying the water.

Nebraska Calf World's Biggest

A 165-pound Holstein heifer calf was born this spring in the herd at the Reformatory for Men, Lincoln, Nebraska. Although this calf is nearly double the size of the average Holstein at birth, the dam is an average 1,300-pound, 5-year-old cow. Her previous two heifer calves were of normal size. This calf is believed to be the biggest calf ever born, and except for its size was normal in every way. She is a product of an artificial insemination from the sire Don Man-O'-War Monarch, a son of a former reserve All-American junior yearling bull.

Ultra-Violet vs. Codliver Oil

At a recent Institute at the University at Storrs, Connecticut, Professor H. M. Scott of the Poultry Department, in speaking of the advantages and disadvantages of ultra-violet irradiation and codliver oil, said there has been some evidence in the past year that codliver oil destroys the yellow color in the skin and shanks of poultry. Very recently investigators have found that while codliver oil supplies vitamins A and D, it tends to destroy Vitamin E, the reproduction vitamin. It has not reduced egg production of hens but tends to produce a Vitamin E deficiency disease.

Hotplate Thawed Frozen Pipe

"Our 880 watt hotplate has proved an efficient pipe thawing device. Recently the water line to the pullet pen froze. I had to be fearful of fire as the floor was covered with straw. I filled a one gallon oil can half full of water and screwed the top on firmly to prevent the steam from escaping. Then I placed a length of ⅜-inch hose such as use on hot water bottles on the spout and boiled the water on the hotplate. The hose was pushed into the pipe as fast as the ice thawed. I thawed the line which ran under the concrete floor with ease and hope this will be of value to others."

C. J. O'LEARY
R. 5, Spokane, Wash.

A new laboratory and shop building for the Agricultural Engineers in the U. S. Department of Agriculture is being built at the Beltsville Research Center in Maryland. Fertilizer placement studies will be transferred there from the old Arlington experiment farm.

buyers' INFORMATION service

YOU, as a reader of this magazine, are entitled to our buyers' information service free of cost. When looking for information about equipment or material that you plan to buy, first read carefully the advertisements in this issue. Then, if you do not find what you want, use the coupon below to tell us what you need and we will forward your request to interested manufacturers.

USE THIS READER SERVICE COUPON

ELECTRICITY ON THE FARM
Reader Service Dept., 24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying:

.....

.....

.....

My name is.....

Address .....

.....

I get electricity from.....

1-42

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

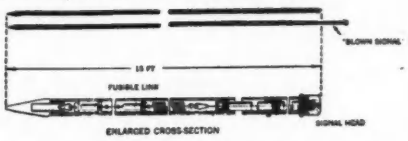
Jiggers

Twist a "Jigger" onto a wire splice. Touch a match to it. It

burns, supplying its own heat, solder and flux. Result: Soldered joint. Free samples available.

Hot Hay Indicators

This hot spot indicator is made to use in piles of coal. It may be of



interest to farmers in connection with the storage or barn drying of damp hay. It consists of a pipe 15 feet long with a fusable link in the point which melts at 150°. On melting, an indicator jumps up at the top of the pipe. Fusable links are replaceable. Shipping weight 75 lbs. Price, $22.50.

Portable Speed Reduction Unit

The speed reduction unit shown is made to be used with a ⅛ or ¼ hp

motor. It is designed to be used with churns, ice-cream freezers, corn sheller, sausage grinder, etc., which are operated at slow speed. Slotted couplings are provided to fit the appliance to be turned. The drive shaft which is adjustable in height is easily connected to the coupling. Price of reducer with belts, one coupling and motor pulley (without motor) is $8.60. Extra couplings 50c up.

New Publications

(Publications are obtainable from the addresses given in the descriptions.)

• UTILIZATION OF FEED AS AFFECTED BY GRINDING. 9 pp. Results of research. Don't grind too fine. Tech. Bul. 10, Okla. Ag. Exp. Sta., Stillwater, Okla.

• FRACTIONAL HORSEPOWER MOTORS. New Folder F-8623, 8 pp. Characteristics, type, rating, mounting and thermal protection of 1/6 to ½ hp motors. Free. Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

• BUILDING ELECTRICAL EQUIPMENT FOR THE FARM. 97 pp., illus., Vocation Division Bul. 209, U. S. Office of Education. Wiring, poultry water warmer, ultra-violet reflector, pig brooder, hotbed, stock tank heater, portable motor, chick brooder, exhaust fan, room cooler. For sale by Superintendent of Documents, Washington, D. C. 20c.

• MYERS 1942 PUMP CATALOG. All types of pumps including the new multi-stage deep well turbine jet pump. Some models least in demand have been omitted this year. Power sprayers and spray equipment and Pump Repairs in separate catalogs. Local dealers or F. E. Myers & Bro. Co., Ashland, O.

• BUSSEY'S WINTER CATALOG. 98 pp of bird and animal pens, fences and equipment. Electric incubators, brooders, water warmers, heating elements, thermostats, feed mixers, sharp freezers, ventilating fans. Bussey Pen Products Co., 5151 W. 65th St., Chicago.

• THREE NEW NATIONAL IDEAL FOLDERS. National Ideal, Toledo, O., has three new folders of interest. One is on Pig Brooders, another on the Warner Chick and Turkey Brooder, and the third on the Warner Stock Tank Heater. All Free.

"'Leading Farmers' are almost always leaders in the use of modern farm equipment." Bon D. Grussing, Minneapolis-Moline Farm Equipment Co.

"You cannot go broke even with a big investment if that investment pays for itself and makes a profit. $1,000 may look like quite a sum to pay for a sprinkler irrigation system. These systems, however, have paid for themselves in three years' use in Western Oregon." F. E. Price, Asst. to Dean of Agriculture, Oregon State College.

"If you think by the inch and talk by the yard, you may be kicked out by the foot."

DAVE WEAVER,
North Carolina

"One pint of milk per day will buy the power to pump water for 15 cows."

"About three quarts of milk will pay for the electricity to milk 350 pounds of milk and cool it."

GEORGE A. REITZ,
General Electric Co.

CLASSIFIED ADVERTISING

MODERNIZE ELECTRICALLY! Complete poultry farm supplies; Infra-Red Ray Brooders, Thermostats, 150 items. *Free 52 page Catalog.* Parts & Plans for building your own brooder. Write today! LYON ELECTRIC COMPANY, Dept. EF, Greensboro, N. C., or San Diego, California.

SIMPLEX SERKUL-HEAT ELECTRIC BROODER STOVES combine correct, natural heat circulation with proper ventilation and safety. Send for catalog. SIMPLEX BROODER STOVE CO., 791 Grandville Ave., Grand Rapids, Michigan.

RAISE TURKEYS FOR PROFIT. Learn latest methods brooding, feeding, confinement growing, dressing, marketing. Read oldest, best turkey magazine. One year $1.00; five months 50c. Turkey World, Desk 233, Mount Morris, Ill.

GET YOUR FREE COPY NOW. Bussey 100-page book for Poultrymen. Low Factory Prices. Parts for electric brooders and batteries; heating assemblies; wire Fabrics; Poultry Department. Save money. BUSSEY PEN PRODUCTS, 5171 West 65th St., Chicago.

WRITE FOR BROWER'S 100 PAGE Catalog describing complete line electric poultry equipment. Eight models Floor Brooders—Water Heaters—Incubators—Hammermills — Feed Mixers. World's Largest Line of Poultry Supplies—over 425 items. BROWER MFG. CO., Dept. N-62, Quincy, Illinois.

VIKING ELECTRIC HAMMER MILLS grind feed fresh daily while you do other chores. No tending—works automatically. Low cost, terms, 30 days trial. Write VIKING MFG. CO., Dept. E., Jackson, Mich.

Help Defense *—and help yourself to some cash. Cash prizes will be given for your ideas and experience on the use of electricity for replacing labor on your farm.*

HOW ELECTRICITY REPLACES LABOR CONTEST

NOVEMBER CONTEST AWARDS

for the last line of this verse:

An electric hover would save the hen bother
Of brooding her chicks night and day.
Why work like the dickens, just brooding some
chickens

.....

FIRST PRIZE - $20 Cash

Let kilowatts brood while hens lay.
MRS. LEROY C. FUNK,
Richmond, Utah.

SECOND PRIZE - $5 Cash

When "switching" will "amp-ly" repay.
STELLA JENSEN,
R.F.D. 2, Lanark, Illinois

Five Consolation Prizes - $3 Each

With methods now labeled passé.
MRS. GEO. PEAKE,
R.F.D. 4, Eufaula, Alabama

Switch to current, the up-to-date way!
MRS. W. F. SCHOPPE,
R.F.D. 2A, Auburn, Maine

When they "thrive" on the "no worry" way.
MRS. W. J. RANDEL,
R.F.D. 2, Mansfield, Ill.

When egg laying produces the pay.
MRS. WILLARD GROSSMAN,
R.F.D. 2, Orient, Ohio

Brood electrically and have the hen lay.
J. LAWRENCE HANBY,
Box 31, Darlington, Penna.

HONORABLE MENTION

The following names are deserving of honorable mention for the lines submitted:

Mrs. L. A. Bowser, 112 E. Mill St., Bremen, Ind.; Mary A. Mateer, R.F.D. 3, West Chester, Pa.; Mrs. P. J. Christiansen, R.F.D. 1, Bennington, Nebr.; Thornton K. Brown, R.F.D. 1, Walden, New York; Marjorie Morr, R.R. 1, New Berlin, Ill.; Mrs. Reed H. Robinson, R.F.D. No. 1, American Fork, Utah; E. Hagan, Agnes, Georgia.

RULES FOR "ELECTRICITY REPLACES LABOR" CONTEST

1. Cash prizes will be forwarded for the best letters or statements on how electricity replaces labor on your farm.
2. Letters need not be lengthy—the shorter the better. Facts and figures are more important than literary style or form of presentation.
3. There will be one first prize of $20.00 cash, one second prize of $5.00 cash, and five prizes of $3.00 cash.
4. We will also pay $1.00 for any other entries we use.
5. In case of a tie each winning contestant will receive the full cash prize to which he or she is entitled.
6. All members of the farm family to whom this magazine was sent may enter, but each contestant may submit only one statement.
7. Entries should be sent to the Defense Production Contest Editor, ELECTRICITY ON THE FARM, 24 W. 40th St., New York, and must be postmarked before February 1.
8. The decision of the judges is final and all entries become the property of this magazine.
9. Winning names and entries will be announced in the March 1942 issue.
10. Send your entry on the coupon or follow the same form on a plain piece of paper, letterhead or government postcard.

We replaced labor with electricity on our farm by

.....

.....

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.....

My name is.....

R.F.D...... **Post Office**.....

County .....

I get electricity from.....

MAKE 1942 PRODUCE FOR YOU AND FOR DEFENSE!

FARMERS!! Increased production is your part of National Defense. "Food will win the war and write the peace," says Sec. of Agric. Wickard.

Electricity can and will help you to make your farm more productive. Electrical machines can make up for your man-power deficiency. There are so many jobs that can be speeded up by the application of low cost electricity.

We hope you'll make 1942 your most productive year. To help you make this wish come true and to get the maximum benefit from your electric service, we are sending you this monthly magazine, ELECTRICITY ON THE FARM, full of good ideas and plans for increasing production with less labor and for speeding up all farm operations.

If there are any questions or if you have any special problems, please do not hesitate to call upon us.

ASK YOUR ELECTRIC COMPANY

or your electrical equipment dealer if you need further information. Or, if you prefer, address your inquiries to ELECTRICITY ON THE FARM, 24 West 40th Street, New York, or 6 No. Michigan Avenue, Chicago.

a

ELECTRICITY ON THE FARM
24 West 40th Street
New York, N. Y.

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